

EOS Science Networks Performance Report

This is a summary of EOS QA SCF performance testing for August and September 2003 -- comparing the performance against the requirements from BAH, including Terra, TRMM, and QuikScat, Aqua, ADEOS II, Aura, SAGE III, and ICESat requirements

Up to date graphical results can be found on the EOS network performance web site (now pretty stable): <http://corn.eos.nasa.gov/networks> (Then click on a category next to "Active Testing"). Or use the links to the individual site results in the site details section.

Highlights:

- Mostly stable performance.
- Performance from LDAAC dropped to several nodes, reducing some ratings.
- Next month the FY '04 requirements will be used as the basis for the ratings.
- New improved network performance web site is almost complete -- try it out: http://ensight.eos.nasa.gov/active_net_measure.html

Change History:

- February 2003: Another requirements update from BAH-- no major changes
- December 2002: Updated to latest BAH requirements, based on Handbook v1.2. Includes additional missions.
- June 2001: The requirements were modified to incorporate an updated number of EOS funded users at each tested site, based on the latest SPSO database. The total number of users increased in this way from 434 to 1012 (US only).
- May 2001: The requirements were increased by adding a 50% contingency factor to all QA and SIPS requirements, which were omitted with the change to the new BAH requirements in March 2001.

Ratings:

Rating Categories:

Excellent: median of daily worst cases > 3 x requirement

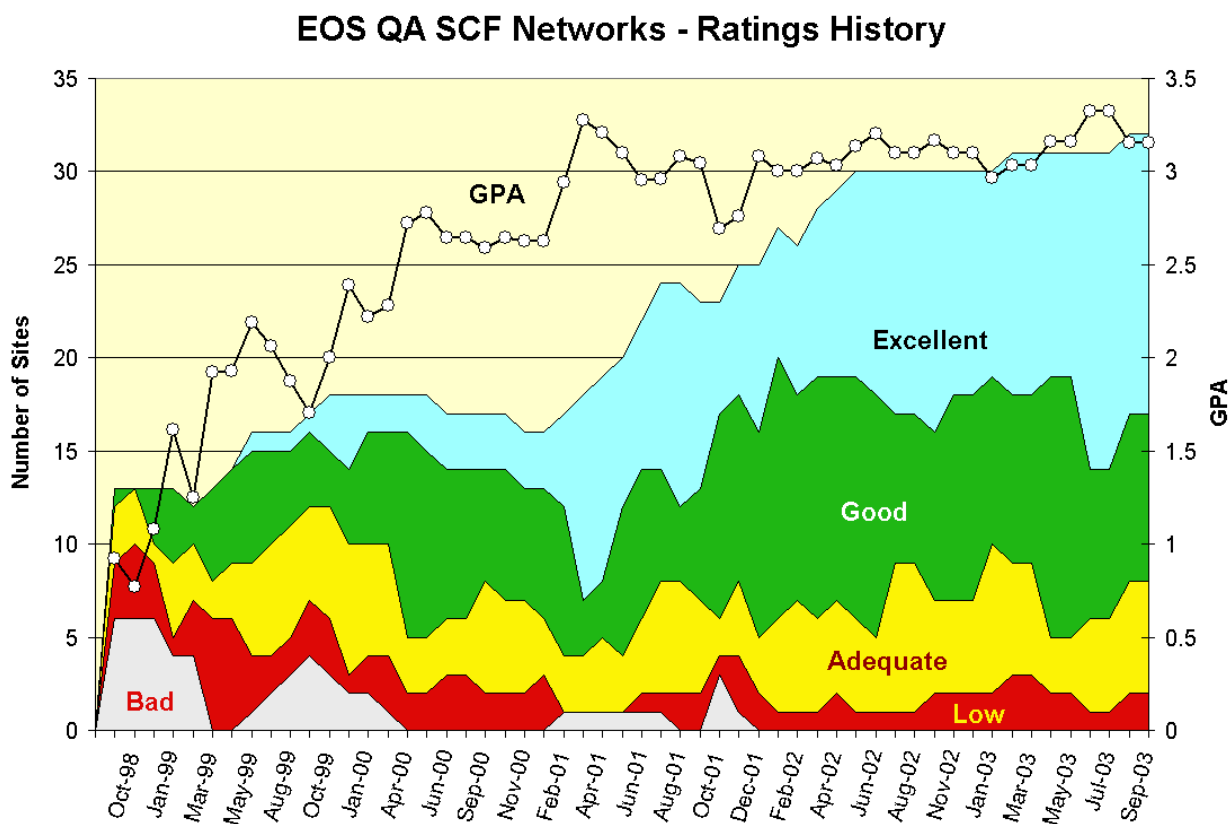
Good: median of daily worst cases > requirement

Adequate: median of daily worst cases < requirement
and
median of daily medians > requirement

Low: median of daily medians < requirement.

Bad: median of daily medians < 1/3 of the requirement.

The chart below shows the number of sites in each classification since the testing started in 1998. Note that these ratings do NOT relate to absolute performance -- they are relative to the EOS requirements. The GPA is calculated based on Excellent: 4, Good: 3, Adequate: 2, Low: 1, Bad: 0



Ratings Changes:

Upgrades: ↑

University of Washington: Adequate → **Good**

JRC: Adequate → **Excellent**

Downgrades: ↓

NSSTC: Excellent → **Good**

LaRC → JPL-MISR: Good → **Adequate**

JPL → RSS: Good → **Adequate**

INPE: Adequate → **Low**

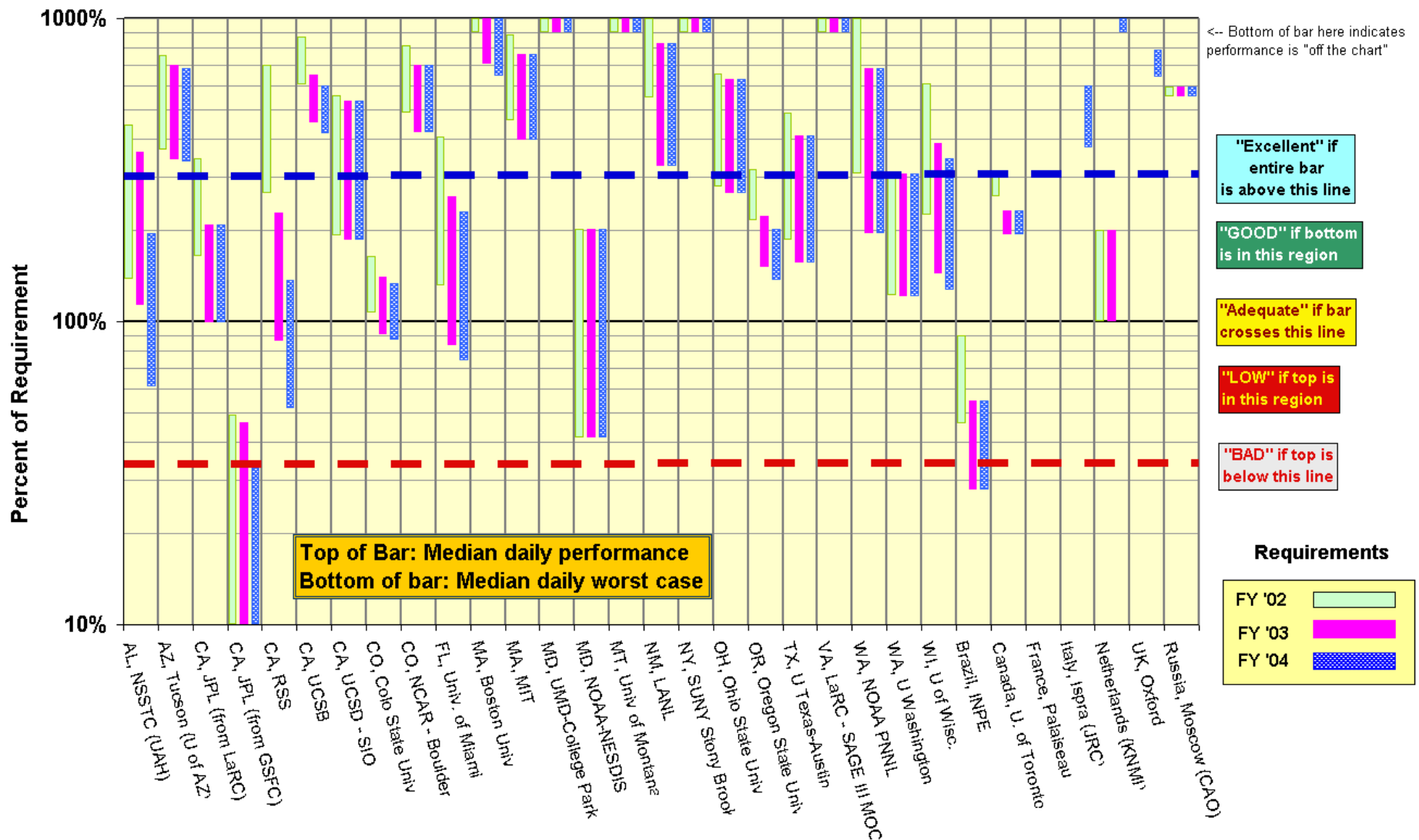
UCLSCF: Excellent → **Adequate**

EOS QA SCF Sites: Network Requirements vs. Measured Performance

September 2003		Requirements (kbps)			Testing							
Destination	Team (s)	Previous:	Current:	Future:	Source Node	Median kbps	Median Daily Worst	Rating re Current Requirements		Rating re		
		Oct-01	Oct-02	Oct-03				Oct-02	Prev			
AL, NSSTC (UAH)	CERES, AMSR	2154	2629	4878	LaTIS	9557	2971	GOOD	E	Adequate	NISN + FDDI	
AZ, Tucson (U of AZ)	MODIS, MISR	2506	2689	2750	EDC	18862	9224	Excellent	E	Excellent	Abilene via MAX	
CA, JPL (from LaRC)	MISR	11192	18484	18484	LDAAC	38486	18355	Adequate	G	Adequate	EMSnet	
CA, JPL (from GSFC)	AIRS, TES, others	16623	17612	24798	GDAAC	8167	1606	LOW	L	BAD	NISN SIP	Increase VC
CA, RSS	AMSR	376	1156	1926	JPL-PODAAC	2636	995	Adequate	G	Adequate	2 * T1 - Consolidated	
CA, UCSB	MODIS	2013	2681	2903	GDAAC	17423	12134	Excellent	E	Excellent	Abilene via MAX	
CA, UCSD - SJO	ICESAT, CERES	6225	6478	6478	GSFC-ICESAT	34637	11990	GOOD	G	GOOD	Abilene via NISN / MAX	
CO, Colo State Univ	CERES	1665	1952	2049	LaTIS	2729	1775	Adequate	A	Adequate	NISN -> Abilene	host interface
CO, NCAR - Boulder	MOPITT, HIRDLS	2102	2438	2438	LaRC DAAC	17044	10289	Excellent	E	Excellent	NISN -> Abilene	
FL, Univ. of Miami	MODIS, MISR	9661	15158	16991	GDAAC	39154	12669	Adequate	A	Adequate	Abilene via MAX	
IL, UIUC	MISR	1134	1133	1133								
MA, Boston Univ	MODIS, MISR	1767	2528	2781	EDC DAAC	30019	17892	Excellent	E	Excellent	Abilene via vBNS+	
MA, MIT	ICESAT	5495	6378	6378	GSFC-ICESAT	48386	25347	Excellent	E	Excellent	Abilene via NISN / MAX	
MD, UMD-College Park	MODIS	1969	2011	2025	GSFC-MAX	149615	123965	Excellent	E	Excellent	Direct Fiber	
MD, NOAA-NESDIS	CERES, AMSR-E	1509	1509	1513	NSIDC	3054	625	Adequate	n/a	Adequate	Abilene via FRGP, MAX	
MT, Univ of Montana	MODIS	459	675	747	EDC DAAC	27270	13697	Excellent	E	Excellent	Abilene via vBNS+	
NM, LANL	MISR	616	1033	1033	LaRC DAAC	8524	3375	Excellent	E	Excellent	NISN -> ESNet via CA	
NY, SUNY Stony Brook	CERES	536	558	566	LaTIS	21783	11348	Excellent	E	Excellent	NISN -> Abilene via Chicago	
OH, Ohio State Univ	ICESAT	5425	5678	5678	GSFC-ICESAT	35669	15038	GOOD	G	GOOD	Abilene via NISN / MAX	
OR, Oregon State Univ	CERES, MODIS	4390	6292	6929	LaTIS	13997	9477	GOOD	G	GOOD	NISN -> Abilene	
PA, Penn State	MISR	2121	2642	2642	LaRC DAAC	19011	11753	Excellent	E	Excellent	NISN -> Abilene	
TX, Texas A & M	AMSR-E	1200	1200	1200								
TX, U Texas-Austin	ICESAT	8755	10430	10430	GSFC-ICESAT	42729	16238	GOOD	G	GOOD	Abilene via NISN / MAX	
VA, LaRC - SAGE III MOC	SAGE III	200	200	200	GSFC-CSAFS	6664	3669	Excellent	E	Excellent	NISN SIP	
WA, NOAA PNNL	MISR	921	1442	1442	LaRC DAAC	9856	2818	GOOD	E	GOOD	NISN -> ESNet via Chicago	
WA, U Washington	ICESAT	10920	11003	11003	GSFC-ICESAT	33737	13311	GOOD	A	GOOD	Abilene via NISN / MAX	
WI, U of Wisc.	MODIS, CERES, AIRS	8360	13114	14788	GSFC-MODIS	50910	18823	GOOD	G	GOOD	Abilene via MAX	
Brazil, INPE	HSB	622	1024	1024	GSFC-MAX	561	286	LOW	A	LOW	Abilene -> AMPath-> ANSP	
Canada, U. of Toronto	MOPITT	456	612	612	LaRC DAAC	1421	1183	GOOD	G	GOOD	NISN T1	NISN-CA*net4
France, Palaiseau	CERES	203	205	206								
Italy, Ispra (JRC)	MISR	308	517	517	LaRC DAAC	3090	1930	Excellent	A	Excellent	NISN-UUNET-Milan	
Netherlands (KNMI)	OMI	0	0	1024	GSFC-MAX	33272	25129	Excellent	E	Excellent	Abilene -> Chi -> Surfnet	
Russia, Moscow (CAO)	SAGE III	26	26	26	CAO->LaRC-N	155	143	Excellent	E	Excellent	NISN -> Moscow	
UK, Oxford	HIRDLS	0	0	512	GSFC-MAX	4023.5	3284	Excellent	E	Excellent	Abilene->JAnet (NY)	
UK, London (UCL)	MISR, MODIS	616	1033	1033	LaRC DAAC	3135	969	Adequate	E	Adequate	Abilene->JAnet (NY)	
		*Rating Criteria:			Rating		Current	Last	Future:			
							Oct-02	Month	Oct-03			
Excellent		Median of Daily worst hours >= 3 * Requirement			Excellent		15	17	15			
GOOD		Median of Daily worst hours >= Requirement			GOOD		9	8	8			
Adequate		Median of Daily worst hours < Requirement <= M			Adequate		6	5	7			
LOW		Requirement > Median of Daily Medians			LOW		2	1	1			
BAD		Requirement > 3 * Median of Daily Medians			BAD		0	0	1			
Change History:		7-Jun-94	Original		Total		32	31	32			
		9-Jul-94	Incorporated new MISR QA flows		GPA		3.16	3.32	3.09			
		9-Sep-94	Added % of requirements columns and a									
		27-Oct-95	Added Previous Status Column									
		30-Jun-96	Added "Excellent" Status, Ratings Summary Chart									
		9-Apr-97	Updated requirements with BAH, added additional sites and missions									
		6-Jun-97	Added ICESAT sites and requirements, added contingency to QA and SIPS									
		12-Jul-97	Updated requirements for latest # of users									
		9-Jan-99	Updated requirements with BAH									

EOS QA SCF Sites

Daily Median and Worst Performance as a percent of Requirements



Details on individual sites:

Each site listed below is the DESTINATION for all the results reported in that section. The first test listed is the one on which the rating is based -- it is from the source most relevant to the driving requirement. Other tests are also listed. The three values listed are derived from [nominally] 24 tests per day. For each day, a daily best, worst, and median is obtained. The values shown below are the medians of those values over the test period.

1) AL, NSSTC (UAH) (aka GHCC)

Teams: CERES, AMSR

Rating: ↓ Excellent → **Good**

Domain: nsstc.uah.edu

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/NSSTC.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC LaTIS	9.7	9.6	3.0	NISN SIP
GSFC	21.4	20.8	17.6	NISN SIP

Requirements:

Source Node	FY	mbps	Rating
LaRC LaTIS	'03	2.6	Good
LaRC LaTIS	'04	4.9	Adequate

Comments: Thruput from LaTIS dropped from about 13 mbps stable to the above values on 25 August, 2003, dropping the FY '03 rating to "Good". Previously, thruput had been stable since the LaTIS node was restored on 30 April, and had been rated "Excellent" for FY '03. Thruput from GSFC has been stable since 18 April 2003.

2) AZ, Tucson (U of AZ):

Teams: MODIS

Rating: Continued **Excellent**

Domain: arizona.edu

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/ARIZONA.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
EDC LPDAAC	30.6	18.9	9.2	Abilene via vBNS+ / Chicago
GSFC	13.6	11.3	7.4	Abilene via MAX
LaRC	25.6	17.4	8.8	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
EDC LPDAAC	'03, '04	2.7	Excellent

Comments: The ratings are based on the MODIS flow from EDC (There is no longer a requirement from LaRC, as the MISR team has all moved away from Arizona).

Performance improved from EDC on 10 September, when EDC restructured its outflow. Previously, it has been very stable since April. The rating from EDC continues to be "Excellent".

3) CA, JPL:

Teams: MISR, AIRS, TES, MLS, ASTER

Domain: jpl.nasa.gov

Web Pages: http://corn.eos.nasa.gov/performance/Net_Health/files/JPL-MISR.htmlhttp://corn.eos.nasa.gov/performance/Net_Health/files/JPL-AIRS.htmlRatings: GSFC: Continued **Low**LaRC: ↓ Good → **Adequate**

Test Results:

Source → Dest	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC → MISR	39.1	38.5	18.4	EMSnet
GSFC DAAC → AIRS	15.0	8.2	1.6	NISN SIP
GSFC → MISR	12.8	12.4	11.8	NISN PIP

Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'03 - '04	18.5	Adequate
GSFC DAAC	'03, '04	17.6, 24.8	Low

Comments: The route from L-DAAC to JPL-MISR was switched to EMSnet on 11 July, with a performance increase from 12 mbps via the private ATM PVC to almost 40 mbps, and a corresponding rating increase to "Good" from "Low". But this month, the median daily worst dropped slightly below the requirement, dropping the rating to "Adequate".

Testing to AIRS is from GDAAC, and uses SIP. Thruput from GDAAC to JPL-AIRS has been generally steady since September '02, with a decline lately due to the heavy outflow from GDAAC. The daily median is still below the requirement, thus a FY'02-'04 rating of "LOW".

Testing from the GSFC campus to JPL has been routed via NISN PIP since September '02, with very steady performance.

4) CA, RSS: (Santa Rosa):

Teams: AMSR

Domain: remss.com

Web page: http://corn.eos.nasa.gov/performance/Net_Health/files/RSS.htmlRatings: ↓ Good → **Adequate**

Test Results:

Source Node	Medians of daily tests (kbps)			Route
	Best	Median	Worst	
JPL PODAAC	2777	2636	995	NISN SIP: 2 x T1

Requirements:

Source Node	FY	kbps	Rating
JPL PODAAC	'03, '04	1156, 1926	Adequate

Comments: Performance has been very stable since August '02, as good as can be expected from a pair of T1s. The median daily worst dropped to a bit below the FY '03 requirement, dropping the rating to "Adequate". For FY'04, the rating remains "Adequate" with its increased requirement.

Note: RSS also has a requirement to flow data to NSSTC (see #1). This is not tested yet. The requirement is 900 kbps in FY '03, but grows to 3.1 mbps in FY'04 and 4.4 mbps in FY'05. While the FY'03 requirement is achievable with the 2 x T1 configuration, the FY'03 and '04 flows are not.

5) CA, UCSB :

Ratings: GSFC: Continued **Excellent**
 EDC: Continued **Excellent**

Teams: MODIS

Domain: s2k.ucsb.edu

Web page: http://corn.eos.nasa.gov/performance/Net_Health/files/UCSB.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-DAAC	21.6	17.4	12.1	Abilene via NISN / MAX
EDC-LPDAAAC	23.4	19.6	15.5	Abilene via vBNS+ / Chicago

Requirements:

Source Node	FY	mbps	Rating
GSFC-DAAC	'03, '04	2.7, 2.9	Excellent
EDC-LPDAAAC	'03, '04	1.9, 2.1	Excellent

Comments: The requirements are split between EDC and GSFC. Performance from both GSFC and EDC is very steady. The rating remains "Excellent" from both sources.

6) CA, UCSD (SIO) :

Ratings: GSFC: Continued **Good**
 LaTIS: Continued **Excellent**

Teams: CERES, ICESAT

Domain: ucsd.edu

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/UCSD.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	57.4	34.6	12.0	Abilene via NISN / MAX
LaTIS	25.5	23.1	17.0	Abilene via NISN / Chi

Requirements:

Source Node	FY	mbps	Rating
GSFC	'03 - '04	6.5	Good
LaTIS	'02 - '04	0.26	Excellent

Comments: The rating is based on testing from the ICESAT SCF at GSFC. Performance improved again at the end of July from ICESAT (median from ICESAT was 24 mbps before that). The rating remains "Good".

Performance from LaTIS has been stable since the LaTIS test node was restored on 30 April – the median prior to that was 13.5 mbps. The CERES requirements are much lower than ICESAT, so the LaTIS rating continues as "Excellent".

7) CO, Colo State Univ.:Rating: Continued **Adequate**

Teams: CERES

Domain: colostate.edu

Web page: http://corn.eos.nasa.gov/performance/Net_Health/files/COLO-ST.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaTIS	3.9	2.7	1.8	Abilene via NISN / Chicago
GSFC	5.8	4.6	3.3	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
LaTIS	'03, '04	1.95, 2.05	Adequate

Comments: Performance from both LaTIS and GSFC remains noisy since 17 June, apparently due to reconfiguration at Colo State (median from LaTIS was 4.5 mbps previously). The daily worst is now BELOW the requirement for '03 through '04, so the rating remains "Adequate". Performance from GSFC would rate as "Good".

8) CO, NCAR:Ratings: LaRC: Continued **Excellent**GSFC: Continued **Excellent**

Teams: MOPITT, HIRDLS

Domain: scd.ucar.edu

Web page: http://corn.eos.nasa.gov/performance/Net_Health/files/NCAR.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	25.9	17.0	10.3	Abilene via NISN / Chicago
GSFC-MAX	44.3	40.3	18.8	Abilene via MAX
EDC	32.9	29.5	22.8	Abilene via vBNS+ / Chicago
ARC	92.9	90.8	74.9	Abilene via CalRen

Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'03, '04	2.4, 2.4	Excellent
GSFC	'03, '04	2.6, 3.1	Excellent

Comments: Performance from LaRC DAAC was stable. The median daily worst remains above 3 x the requirement, so the rating remains "Excellent".

Performance from GSFC-MAX and EDC both dropped on 30 May, from about 70 to 45 mbps, due to TCP slow rampup. At that time, however, performance from "GSFC-ESTO" was unaffected, staying at about 90 mbps. But when "GSFC-ESTO" was switched from a fast-E interface to a GigE interface on 24 July, the slow TCP rampup was then observed, dropping performance to only 30 mbps. Performance from NASA Ames continues at over 90 mbps. Strange...it looks like maybe when both hosts are on GigE interfaces, a TCP stack anomaly is created. Still under investigation.

9) FL, Univ. of Miami:

Rating: GSFC: Continued **Adequate**
 LaRC: Continued **Excellent**

Teams: MODIS, MISR

Domain: rsmas.miami.edu

Web page: http://corn.eos.nasa.gov/performance/Net_Health/files/MIAMI.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-DAAC	95.7	39.2	12.7	Abilene via NISN / MAX
GSFC-MAX	221.9	145.8	65.6	Abilene via MAX
LaRC DAAC	21.5	13.9	8.4	Abilene via NISN / Chicago

Requirements:

Source Node	FY	mbps	Rating
GSFC	'03 , '04	15.1, 17.0	Adequate
LaRC DAAC	'03 - '04	1.1	Excellent

Comments: Network reconfiguration at Miami in mid August improved performance dramatically from GSFC sources (medians were 13 mbps from GDAAC, and 40 mbps from GSFC-MAX before that)– would now be rated "excellent" from GSFC-MAX. But performance from GDAAC remains noisy (about an 8:1 ratio between daily best and worst), due in part to high levels of outflow from GDAAC. The daily worst is a bit below the requirement, so the rating remains "Adequate".

Performance from LaRC DAAC has been stable since 29 April, possibly due to NISN VC reconfig — increases rating from LaRC to "Excellent".

10) MA, Boston Univ:

Ratings: EDC: Continued **Excellent**
 LaRC: Continued **Excellent**

Domain: bu.edu

Teams: MODIS, MISR

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/BU.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
EDC DAAC	32.9	30.0	17.9	Abilene via vBNS+ / Chicago
GSFC	91.3	86.7	38.4	Abilene via MAX
LaRC DAAC	25.9	18.6	11.7	Abilene via NISN / Chicago

Requirements:

Source Node	FY	mbps	Rating
EDC DAAC	'03, '04	2.0, 2.3	Excellent
LaRC DAAC	'03 - '04	1.2	Excellent

Comments: Performance from EDC dropped due to EDC reconfig on 10 September (median was 60 mbps before that). But the performance is still well above the requirement, so the rating continues to be "Excellent".

Performance from LaRC remains stable. The LaRC requirement is small, so the rating continues to be "Excellent".

Performance from GSFC has been stable since 27 June.

11) MA, MIT:

Teams: ICESAT

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/MIT.htmlRating: Continued **Excellent**

Domain: mit.edu

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	65.2	48.4	25.3	Abilene via NISN / MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC	'03-'04	6.4	Excellent

Comments: Performance from GSFC to MIT has been very stable; the rating remains "Excellent".**12) MD, NOAA-NESDIS (Camp Springs)**

Teams: CERES, AMSR-E

Web Pages: http://corn.eos.nasa.gov/performance/Net_Health/files/NOAA-Camp-Springs.htmlRating: **Adequate**

Domain: nesdis.noaa.gov

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
NSIDC	10.5	3.1	0.6	FRGP / Abilene / MAX
LATIS	11.7	7.8	2.9	
GSFC-SEN	27.6	18.9	7.5	Peering at MAX

Requirements (QA only):

Source Node	FY	mbps	Rating
NSIDC	'02 – '04	1.51	Adequate
LATIS	'02 – '04	0.21	Excellent

Comments: Requirements identified for NSIDC and LaTIS to NOAA; testing began in August. Testing from GSFC has been ongoing. The NOAA test node was down from late August to early October; the data above is from August (looks similar in October).

Apparent congestion from NSIDC causes median daily worst to be below the requirement, thus a rating of "Adequate". There is less noise from LaTIS, and a lower requirement; rating "Excellent".

13) MD, Univ. of Maryland:Rating: Continued **Excellent**

Teams: MODIS

Domain: umd.edu

Web Pages: http://corn.eos.nasa.gov/performance/Net_Health/files/UMD-SCF.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-MAX	156.4	149.6	124.0	Direct Fiber OC-12 / MAX / SCF
EDC	127.5	73.5	26.2	VBNS+ / Chi / Abilene / MAX / SCF
NSIDC	37.5	37.3	36.8	Abilene / MAX / SCF

Requirements (QA only):

Source Node	FY	mbps	Rating
GSFC DAAC	'02 – '04	2.0	Excellent

Comments: Performance from GSFC-MAX restored at the end July – had dropped from 152 to 125 mbps on 8 April. Somewhat noisy but long term stable from EDC. Extremely stable from NSIDC.

14) MT, Univ of Montana:Rating: Continued **Excellent**

Teams: MODIS

Domain: ntsg.umt.edu

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/MONT.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
EDC LPDAAC	28.8	27.3	13.7	VBNS+ / Chi / Abilene
GSFC	38.4	34.3	22.0	MAX / Abilene
NSIDC	38.9	32.0	19.0	CU / FRG / Abilene

Requirements:

Source Node	FY	kbps	Rating
EDC LPDAAC	'03, '04	675, 747	Excellent

Comments: Stable performance from all sources. With the low requirements, the rating continues as "Excellent".

15) NM, LANL:Rating: Continued **Excellent**

Teams: MISR

Domain: lanl.gov

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/LANL.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	14.1	8.5	3.4	NISN SIP / MAE-W (Ames) / ESnet
GSFC	11.2	6.8	3.0	MAX / ESnet

Requirements:

Source Node	FY	kbps	Rating
LaRC DAAC	'03-'04	1033	Excellent

Comments: Performance from both LDAAC and GDAAC variable but overall stable, rating remains "Excellent" (but barely so)/

16) NY, SUNY-SB:Rating: Continued **Excellent**

Teams: CERES, MODIS

Domain: sunysb.edu

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/SUNYSB.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaTIS	26.2	21.8	11.3	NISN SIP / MAX / Abilene / NYSERnet
GSFC	52.9	43.7	28.4	MAX / Abilene / NYSERnet

Requirements:

Source Node	FY	kbps	Rating
LaTIS	'02-'04	560	Excellent

Comments: Performance from both sites improved on 17 August (prior medians were 14 mbps for LaTIS and 27 mbps from GSFC). With the low requirement, the rating remains "Excellent".

17) OH, Ohio State Univ:Rating: Continued **Good**

Teams: ICESAT

Domain: ohio-state.edu

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/OHIO-STATE.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	55.7	35.7	15.0	Abilene via NISN / MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC	'03 - '04	5.7	Good

Comments: Performance somewhat less noisy but stable since firewall installation at Ohio in September '02. Rating remains "Good" but close to Excellent.

18) OR, Oregon State Univ:Ratings: LaTIS: Continued **Good**GSFC: Continued **Excellent**

Domain: oce.orst.edu

Teams: CERES, MODIS

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/ORST.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaTIS	16.8	14.0	9.5	Abilene via NISN / Chicago
JPL	7.0	5.1	4.2	Commodity Internet
GSFC	11.3	8.4	4.5	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
LaTIS	'03, '04	6.1, 6.9	Good
GDAAC	'02 - '04	0.20	Excellent

Comments: Performance from LaTIS pretty stable since July; rating remains "Good". Performance stable from GSFC, rated "Excellent". From JPL, route switched to Commodity internet on 16 June, performance dropped from 18 mbps median previously.

19) PA: Penn State Univ:Rating: Continued **Excellent**

Teams: MISR

Domain: psu.edu

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/PENN-STATE.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	26.4	19.0	11.8	Abilene via NISN / MAX
GSFC	74.4	74.2	63.8	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'03-'04	2.6	Excellent

Comments: Performance from LDAAC noisy but stable since 1 March; the rating remains "Excellent". Performance from GSFC has been extremely stable since 12 Feb.

20) TX: Univ. Texas - AustinRating: Continued **Good**

Teams: ICESAT

Domain: utexas.edu

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/TEXAS.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	50.4	42.7	16.2	Abilene via NISN / MAX
GSFC-MAX	52.6	51.6	20.3	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC	'03-'04	10.4	Good

Comments: Performance from GSFC-MAX and ICESAT-SCF at GSFC via Abilene stable since July; the rating remains "Good".

21) VA, LaRC - SAGE III MOC:Rating: Continued **Excellent**

Teams: SAGE III

Domain: larc.nasa.gov

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/SAGE-MOC.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-SAFS	7.0	6.7	3.7	NISN SIP

Requirements:

Source Node	FY	kbps	Rating
GSFC SAFS	'02 – '04	200	Excellent

Comments: Upgrade of LaRC MOC machine on 19 Feb improved thruput (median was 3.9 mbps with old host).

22) WA, Pacific Northwest National Lab:Rating: ↓ Excellent → **Good**

Teams: MISR

Domain: pnl.gov

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	14.0	9.9	2.8	ESnet via NISN - Chicago
GSFC	15.8	12.3	5.6	ESnet via MAX

Requirements:

Source Node	FY	mbps	Rating
LaRC DAAC	'03-'04	1.4	Good

Comments: Performance from LaRC to PNNL got a bit noisier, now with a 5:1 ratio between typical daily best and worst (was 3:1 previously). The median daily worst is now below 3 x the requirement, so the rating drops back to "Good". Noisiness also increased from GSFC.

23) WA, Univ Washington:Rating: ↑ Adequate → **Good**

Teams: ICESAT

Domain: washington.edu

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/UW.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-ICESAT	48.5	33.7	13.3	Abilene via NISN/MAX
GSFC-MAX	50.8	50.3	17.8	Abilene via MAX

Requirements:

Source Node	FY	mbps	Rating
GSFC	'02 – '04	11.0	Good

Comments: Performance from ICESAT-SCF at GSFC is a bit noisier than from GSFC-MAX. The median daily worst is now above the requirement, so the rating improves to "Good".

24) WI, Univ. of Wisconsin:

Ratings: GSFC: Continued **Good**
 LARC: Continued **Adequate**

Teams: MODIS, CERES, AIRS

Domain: ssec.wisc.edu

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/WISC.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-MODIS	82.6	50.9	18.8	MAX / Abilene / Chi / MREN
LaTIS	12.1	8.8	3.7	NISN / Chicago / MREN
GSFC-MAX	55.7	47.3	19.3	MAX / Abilene / Chi / MREN
GSFC-NISN	16.4	15.9	10.7	NISN / Chicago / MREN

Requirements:

Source Node	FY	mbps	Rating
GSFC	'03, '04	13.1, 14.8	Good
LaRC Combined	'03, '04	6.8, 7.5	Adequate

Comments: Performance from all sources has been generally stable since March, with increased noisiness – indicating congestion in the vicinity of Wisconsin.

The rating is based on the larger GSFC requirement, and therefore remains “Good”.

25) Brazil, INPE:

Rating: ↓ Adequate → **Low**

Team: HSB

Domain: inpe.br

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/INPE-HSB.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC	1.1	0.6	0.3	MAX / Abilene / AMPATH / ANSP
GSFC	0.6	0.3	0.1	NISN / GBLX / ANSP

Requirements: (2 ISTs only)

Source Node	FY	mbps	Rating
GSFC EOC	'02 – '04	1.02	Low

Comments: Testing via two routes: commodity internet (GBLX), and AMPATH. Performance decreased again on 22 August. Had increased on both routes from 14 May to 30 June (medians were 3.6 mbps via AMPATH and 1.0 mbps via commodity internet for that period). Then went back to previous levels on 30 June (2.2 mbps median via AMPATH, 1.1 via GBLX). Rating decreases further to “Low”.

26) Canada, Univ of Toronto:Rating: Continued **Good**

Team: MOPITT

Domain: physics.utoronto.ca

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/TORONTO.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	1.43	1.42	1.18	NISN / GSFC / T1
LaRC DAAC	8.4	4.5	1.2	NISN / Chicago / CA*net4
GSFC	1.43	1.43	1.23	NISN / T1
GSFC	28.1	27.9	22.7	MAX / Abilene / Chicago / CA*net4

Requirements:

Source Node	FY	kbps	Rating
LaRC DAAC	'02 - '04	100	Excellent
GSFC EOC	'02 - '04	512	Good
Combined	'02 - '04	612	Good

Comments: Performance from both LDAAC (Source of QA data) and GSFC (Source for IST) via NISN dedicated T1 is very steady. Since both flows are combined together on the T1, the performance compared to the combined requirement rates as "Good".

Performance via CA*net4 from GSFC has been very steady since 19 August 2002. It would be rated "Excellent". Performance from LaRC via NISN / Chicago / CA*net4 / ONet dropped quite a bit – median had been typ 9 mbps last month.

27) Italy, EC - JRC:Rating: ↑ Adequate → **Excellent**

Teams: MISR

Domain: ceo.sai.jrc.it

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/JRC.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	3.3	3.1	1.9	NISN / UUnet / Milan
GSFC-NISN	3.5	3.3	2.0	NISN / UUnet / Milan

Requirements:

Source Node	FY	kbps	Rating
LaRC DAAC	'02 – '04	517	Excellent

Comments: Performance improved dramatically from both sources on 24 July, improving the rating to "Excellent" -- apparently due to a UUnet upgrade.

28) Netherlands, KNMI:Rating: Continued **Excellent**

Teams: OMI

Domain: nadc.nl

Web Pages: http://corn.eos.nasa.gov/performance/Net_Health/files/KNMI-OMIPDR.html
http://corn.eos.nasa.gov/performance/Net_Health/files/KNMI.html

Test Results:

Source → Dest	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC-MAX → OMI PDR Server	35.1	33.3	25.1	MAX / Abilene/ Chi / Surfnets
GSFC-MAX → KNMI Test Node	89.6	83.6	9.1	MAX / Abilene/ Chi / Surfnets
GSFC-NISN → KNMI Test Node	29.5	7.9	1.4	NISN / Chi / Surfnets

Requirements: (2 ISTs Only)

Source Node	FY	Mbps	Rating
GSFC	'04	1.02	Excellent

Comments: Performance via Abilene and Surfnets is very stable to both the OMI PDR server. This is exceptionally good performance for US to Europe! However, the noisiness increased to the KNMI Test node this month, over both routes.

Note that performance via NISN to Chicago is much lower and noisier than via Abilene. Therefore, it is important that all servers at GSFC which communicate with KNMI have access to MAX.

29) Russia, CAO (Moscow):Rating: Continued **Excellent**

Teams: SAGE III

Domain: mipt.ru

Web Pages: http://corn.eos.nasa.gov/performance/Net_Health/files/CAO.html
http://corn.eos.nasa.gov/performance/Net_Health/files/LARC-SAGE.html

Test Results:

Source → Dest	Medians of daily tests (kbps)			Route
	Best	Median	Worst	
CAO → LaRC	155	155	143	MIPT / TCnet / NISN SIP
CAO → LaRC	1293	1242	464	Commodity Internet
LaRC → CAO	144	140	122	NISN SIP / TCnet / MIPT
LaRC → CAO	1460	1253	311	Commodity Internet

Requirements:

Source → Dest	FY	kbps	Rating
CAO → LaRC	'02 – '04	26	Excellent
LaRC → CAO	'02 – '04	26	Excellent

Comments: Performance testing running since 1 November '02, with dual routes. Performance on NISN dedicated circuit to Moscow, then TCnet (NASA Russian ISP) tunnel to CAO ISP (MIPT) is extremely steady in both directions.

The dual route configuration also allows testing via the commodity internet route. Performance via that route is better, but is more variable, and also would rate Excellent. Internet performance improved about 200 kbps in both directions starting on March 31.

Note: On approx 1 October, the CAO ISP was reconfigured. At that time, the NISN route was disabled. The throughput testing over this route has been disabled since that time, although NISN believes the route has been restored. Under investigation.

30) UK, London: (UCL SCF)Rating: ↓ Excellent → **Adequate**

Teams: MODIS, MISR

Domain: ucl.ac.uk

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/UCLSCF.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
LaRC DAAC	8.5	3.1	0.97	NISN / StarTAP/CA*net / NY / GEANT / JAnet
GSFC MAX	48.4	48.3	28.4	MAX / Abilene / NY / JAnet

Requirements

Source Node	FY	mbps	Rating
LaRC DAAC	'02 – '04	1.03	Adequate

Comments: Route from LDAAC switched in early August, previously using Abilene for transit from MAX to NY, now CA*net from STAR TAP. Performance dropped dramatically, with median daily worst just below the requirement, dropping the rating to "Adequate" (was "Excellent").

Performance from GSFC to the new host (May '03) remains stable and Excellent..

31) UK, Oxford:Rating: Continued **Excellent**

Teams: HIRDLS

Domain: ox.ac.uk

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/OXFORD.html

Test Results:

Source Node	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC	4.0	4.0	3.3	MAX / Abilene / NY / JAnet

Requirements: (IST Only)

Source Node	FY	kbits	Rating
GSFC	'03 – '04	512	Excellent

Comments: Very steady short term performance continues, but occasional step changes: -- switching between 3.4 (most common), 4.0, or 5.1 mbps. Stable at 4.0 mbps since early May. But all these values rate as excellent compared to the IST requirement.

Test Results to other EOS HIRDLS UK Sites (Requirements TBD):

Web Page: http://corn.eos.nasa.gov/performance/Net_Health/files/UK-RAL.html

Source → Dest	Medians of daily tests (mbps)			Route
	Best	Median	Worst	
GSFC → RAL	20.5	11.6	3.9	MAX / Abilene / NY / JAnet

Comments: Thruput to RAL remains noisy, but quite good, with frequent step changes. The most recent change was an improvement from a median of 5 mbps in mid June.